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10/707,644	12/29/2003	Guy Pardon	FREI.P048DV	1643
57380 • 7590 03/23/2007 Oppedahl Patent Law Firm LLC P.O. BOX 4850 FRISCO, CO 80443-4850			EXAMINER LOVEL, KIMBERLY M	
			ART UNIT 2167	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE		NOTIFICATION DATE		DELIVERY MODE
3 MONTHS		03/23/2007		ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

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**Office Action Summary**

Application No.

10/707,644

Applicant(s)

PARDON ET AL.

Examiner

Kimberly Lovel

Art Unit

2167

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 04 January 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 6-18, 20 and 23-37 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 6-18, 20 and 23-37 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

1. This communication is responsive to the Amendment filed 4 January 2007.
2. Claims 6-18, 20 and 23-37 are pending in this application. Claims 6, 8, 10, 11, 12, 15, 18 and 23 are independent. In the Amendment filed 4 January 2007, a set of claims were not filed and therefore it is considered that the claims are presently the same as filed on 18 July 2006. This action is made Non-Final.
3. The rejections of claims 6, 8, 10, 11, 12 and 15 as being anticipated by the article "Transaction Scheduling in Dynamic Composite Multidatabase Systems" to Bradshaw et al and claims 7, 9, 13, 14, 16, 17, 18, 20 and 23-37 as being unpatentable over the article "Transaction Scheduling in Dynamic Composite Multidatabase Systems" to Bradshaw et al in view of US Patent No 6,233,585 to Gupta et al have been withdrawn.

### ***Claim Objections***

4. Claims **18, 23, 32 and 37** are objected to because of the following informalities:

**Claim 18**, line 5 recites "the root invocation or or." Since "or" is repeated, it is suggested that the second "or" be deleted.

**Claim 18** recites "its/his" in line 6. The metes and bounds of this limitation are unclear since it is not known whether the limitation is directed towards "its and his" or its or his."

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Regarding **claim 23**, it is suggested that "and" is inserted at the end of line 10.

**Claim 32** recites the limitation "i.e. stored on persistent storage." It is unclear whether or not this limitation changes the metes and bounds of the claim.

**Claim 37** recites the limitation "still allowing globalCommit in the end" in line 2. The limitation "in the end" raises the question of "in the end" of what and therefore is deemed to be unclear.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims **7, 8, 18, 24, 25 and 28** rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

**Claim 7** recites the limitations "the root transaction" in line 1 and "the resulting distributed transaction" in line 2. There are insufficient antecedent basis for these limitations in the claims.

**Claim 8** recites the limitation "the method comprising the steps of" in line 11. There is insufficient antecedent basis for this limitation in the claim. Furthermore, this limitation is deemed unclear since the claim is directed towards a system that suddenly mentions a method without the limitation of executing the method.

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**Claim 18** recites the limitation "the root invocation" in line 5, "the root's human user" in line 5; "the entire invocation" in line 6. There is insufficient antecedent basis for this limitation in the claim.

**Claim 24** recites the limitation "the order of their original counterparts" in line 2. There is insufficient antecedent basis for this limitation in the claim.

**Claim 25** recites the limitation "the corresponding normal operations" in line 2. There is insufficient antecedent basis for this limitation in the claim.

**Claim 28** recites the limitations "the data managed" in lines 1-2 and "the original operation" in line 2. There is insufficient antecedent basis for these limitations in the claim.

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent; published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

**8. Claims 12-17 are rejected under 35 U.S.C. 102(e) as being anticipated by US Patent No 6,076,078 to Camp et al (hereafter Camp).**

Referring to claim 12, Camp discloses a distributed system, said system characterized as a composite system comprising at least one processor (see abstract), the system comprising

a plurality of processes; each process having an interface and implementing at least one respective service defined by that interface (see Fig 2);

each or any globalCommit message exchange between processes also carrying information about the actual work being committed [token] (see column 6, lines 25-40 and column 11, lines 45-56).

Referring to claim 13, Camp discloses the system of claim 12, such information being logged for recoverability in the event of a crash, such information being used for assistance at any time before, during or after global commitment (see column 9, lines 52-57).

**Referring to claim 14**, Camp discloses the system of claim 12 or 13, wherein any globalCommit requires a registration [archive], and wherein the registration for a globalCommit also carries information about the actual work being committed [token] (see column 7, lines 7-16).

**Referring to claim 15**, Camp discloses a method for use in a distributed system, said system characterized as a composite system, the system comprising a plurality of processes; each process having an interface and implementing at least one respective service defined by that interface (see Fig 2), the method comprising the step of: for each or any globalCommit message exchange between processes also carrying information about the actual work being committed [token] (see column 6, lines 25-40 and column 11, lines 45-56).

**Referring to claim 16**, Camp discloses the method of claim 15 further comprising the step of logging for recoverability in the event of a crash, such information being used for assistance at any time before, during or after global commitment (see column 9, lines 52-57).

**Referring to claim 17**, Camp discloses the method of claim 15 or 16 further comprising the step of propagating a registration [archive] for a global commit, and wherein the registration for a globalCommit also carries information about the actual work being committed [token] (see column 7, lines 7-16).

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**9. Claims 18 and 20 are rejected under 35 U.S.C. 102(e) as being anticipated by US Patent No 6,457,065 to Rich et al (hereafter Rich).**

**Referring to claim 18**, Rich discloses a distributed system, said system characterized as a composite system (see abstract), the system comprising a plurality of processes; each process having an interface and implementing at least one respective service defined by that interface (see column 10, lines 1-41);

wherein the root invocation or, alternatively, the root's human user is allowed to dynamically set its/his concurrency preferences for the entire invocation; wherein the root invocation propagates the concurrency preferences with each or any child invocation it makes in order to provide improved customization; wherein the propagated concurrency preferences at any level in the root invocation's invocation hierarchy specify the extent to which shared resource access is desired or allowed or denied among descendant invocations of the root invocation or user and other, concurrent invocations who are also descendants of the same root (see column 7, line 66 – column 8, line 18).

**Referring to claim 20**, Rich discloses the system of claim 19 wherein each invocation propagates the concurrency preferences as it has received them from the root invocation (see column 7, line 66 – column 8, line 18).



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***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. **Claims 6-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No 6,457,065 to Rich et al (hereafter Rich) in view of US Patent No 6,272,515 to Fouquet (hereafter Fouquet).**

Referring to claim 6, Rich discloses a data management system, said system characterized as a composite system comprising at least one processor (see abstract), the system comprising

a plurality of processes; each process having an interface and implementing at least one respective service defined by that interface (see column 10, lines 1-41);

a first invocation of the at least one respective service by a transaction resulting in the creation of a first transaction [Child Tx 411] local to the process [Node\_1 401] thereof, the first local transaction being a child of the invoking transaction [Top-level Tx 410] and being parent of any transaction triggered by invocation of a service of another process [Child Tx 413] (see column 9, lines 41-67 and Fig 4A);

a second invocation of the at least one respective service by a transaction resulting in the creation of a second transaction [child Tx 412] local to the

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process [Node\_1 401] thereof, the second local transaction being a child of the invoking transaction [Top-level Tx 410] and being parent of any transaction triggered by invocation of a service of another process [Child Tx 415] (see column 9, lines 41-67);

each process further characterized in that each transaction local thereto is independently handled at the process (see column 10, lines 31-41 and column 13, lines 8-14);

each process making scheduling and recovery decisions independent of any centralized component (see column 10, lines 31-41 and column 13, lines 8-14).

However, Rich fails to explicitly disclose the further limitation of each process characterized in that if the first transaction and the second transaction conflict but are both children of a same invoking transaction, then the first transaction and the second transaction are not executed concurrently. Fouquet discloses scheduling distributed transactions (see abstract), including the further limitation of each process characterized in that if the first transaction and the second transaction conflict but are both children of a same invoking transaction, then the first transaction and the second transaction are not executed concurrently (see column 2, line 62 – column 3, line 7).

It would have been obvious to utilize the step of determining whether or not to process sibling transactions as disclosed by Fouquet with the distributed transactions of Rich. One would have been motivated to do so in order to allow

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for conflicts of execution between operations of different transactions (Fouquet: see column 1, lines 42-49).

**Referring to claim 7**, the combination of Rich and Fouquet (hereafter Rich/Fouquet) discloses the system of claim 6 wherein the root transaction is able to dynamically set concurrency preferences for the resulting distributed transaction, based on client needs (Rich: see column 7, line 66 – column 8, line 18).

**Referring to claim 8**, Rich discloses a data management system, said system characterized as a composite system comprising at least one processor (see abstract), the system comprising

a plurality of processes; each process having an interface and implementing at least one respective service defined by that interface (see column 10, lines 1-41);

invocation of the at least one respective service by a thread [query] of the invoking transaction and being parent of any transaction triggered by invocation of a service of another process (see column 9, lines 41-67; column 17, lines 47-57; and Fig 4A);

each process further characterized in that each transaction local thereto is independently handled at the process (see column 10, lines 31-41 and column 13, lines 8-14);

each process making scheduling and recovery decisions independent of any centralized component triggered by invocation of a service of another process, each process further characterized in that each transaction local thereto

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is independently handled at the process, each process making scheduling and recovery decisions independent of any centralized component (see column 10, lines 31-41 and column 13, lines 8-14).

However, Rich fails to disclose the further limitation of the method.

Fouquet discloses scheduling distributed transactions (see abstract), including the further limitation of the method comprising the steps of:

propagating from a first process to a second process a message indicative of a globalCommit operation with respect to a root transaction, said message also indicative of a number [counter] or identifying list of invocations which the first process has made to the second process on behalf of the root transaction (see column 3, lines 31-36);

within the second process, comparing the number or list indicated in the message with a count or list within the second process of the number or list of invocations which have been made on behalf of the root transaction (see column 3, lines 45-52);

in the event the comparison yields a non-match, aborting the transaction (see column 3, lines 45-52).

It would have been obvious to utilize the step of determining whether to abort the transaction as disclosed by Fouquet with the distributed transactions of Rich. One would have been motivated to do so in order to allow for conflicts of execution between operations of different transactions (Fouquet: see column 1, lines 42-49).

**Referring to claim 9**, Rich/Fouquet discloses the system of claim 8, wherein each process is built using Java (see column 7, lines 25-29).

**Referring to claim 10**, Rich discloses a method for use with a data management system, said system characterized as a composite system (see abstract), the system comprising a plurality of processes, each process having an interface and implementing at least one respective service defined by that interface (see column 10, lines 1-41), invocation of the at least one respective service by a transaction resulting in the creation of a transaction local to the process thereof, the local transaction being a child of the invoking transaction and being parent of any transaction triggered by invocation of a service of another process (see column 9, lines 41-67; column 17, lines 47-57; and Fig 4A), each process further characterized in that each transaction local thereto is independently handled at the process, each process making scheduling and recovery decisions independent of any centralized component (see column 10, lines 31-41 and column 13, lines 8-14).

However, Rich fails to disclose the further limitation of the method. Fouquet discloses scheduling distributed transactions (see abstract), including the further limitation of the method comprising the steps of:

propagating from a first process to a second process a message indicative of a globalCommit operation with respect to a root transaction, said message also indicative of a number [counter] or identifying list of invocations which the first process has made to the second process on behalf of the root transaction (see column 3, lines 31-36);

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within the second process, comparing the number or list indicated in the message with a count or list within the second process of the number or list of invocations which have been made on behalf of the root transaction (see column 3, lines 45-52);

in the event the comparison yields a match, proceeding with the globalCommit (see column 3, lines 45-52).

It would have been obvious to utilize the step of determining whether to abort the transaction as disclosed by Fouquet with the distributed transactions of Rich. One would have been motivated to do so in order to allow for conflicts of execution between operations of different transactions (Fouquet: see column 1, lines 42-49).

**Referring to claim 11**, Rich discloses a method for use with a data management system, said system characterized as a composite system (see abstract), the system comprising a plurality of processes, each process having an interface and implementing at least one respective service defined by that interface (see column 10, lines 1-41), invocation of the at least one respective service by a transaction resulting in the creation of a transaction local to the process thereof, the local transaction being a child of the invoking transaction and being parent of any transaction triggered by invocation of a service of another process (see column 9, lines 41-67; column 17, lines 47-57; and Fig 4A), each process further characterized in that each transaction local thereto is independently handled at the process, each process making scheduling and

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recovery decisions independent of any centralized component (see column 10, lines 31-41 and column 13, lines 8-14).

However, Rich fails to disclose the further limitation of the method.

Fouquet discloses scheduling distributed transactions (see abstract), including the further limitation of the method comprising the steps of:

propagating from a first process to a second process a message indicative of a globalCommit operation with respect to a root transaction, said message also indicative of a number [counter] or identifying list of invocations which the first process has made to the second process on behalf of the root transaction (see column 3, lines 31-36);

within the second process, comparing the number or list indicated in the message with a count or list within the second process of the number or list of invocations which have been made on behalf of the root transaction (see column 3, lines 45-52);

in the event the comparison yields a non-match, aborting the transaction (see column 3, lines 45-52).

It would have been obvious to utilize the step of determining whether to abort the transaction as disclosed by Fouquet with the distributed transactions of Rich. One would have been motivated to do so in order to allow for conflicts of execution between operations of different transactions (Fouquet: see column 1, lines 42-49).

**12. Claims 23-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over US No 6,457,065 to Rich et al in view of US Patent No 6,233,585 to Gupta et al (hereafter Gupta).**

Referring to claim 23, Rich et al disclose a data management system, referred to as service, comprising:

One or more operations that can be invoked by remote clients; Some or all such remote clients having one or more associated contexts or transaction contexts (see column 10, lines 1-41).

However, Rich fails to explicitly disclose the further limitations. Gupta et al discloses a transaction system (see abstract), including the further limitations of an invocation by a remote client also containing partial or complete information indicating or containing said client's context or contexts (see column 8, lines 10-51); an invocation, by a remote client, of an operation leading to a new transaction different from, but possibly related to, any existing client transaction (see column 5, lines 16-19); such an operation-level transaction being committed before the client context is terminated before globalCommit notification (see column 12, lines 28-57); the service maintaining an undo operation for such a committed operation (see column 6, lines 12-20); a failing or failed remote client context leading to the execution of the undo operations of the corresponding committed invocations in the service (see column 7, lines 42-46) in order to provide recoverability.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the feature of undo operations as disclosed by Gupta et al



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with the management system of Rich. One would have been motivated to do so in order to provide recoverability.

**Referring to claim 24**, Rich/Gupta discloses the system of claim 23 where some or all undo operations are executed in an order that is the reverse of the order of their original counterparts (Gupta et al: see column 9, line 66 – column 10, line 2 – rollback is considered to represent undo; first-in-last-out is considered to represent reverse order).

**Referring to claim 25**, Rich/Gupta discloses the system of claim 23 where in addition the undo operations are chosen or defined in the same system as the one where the corresponding normal operations were executed (Gupta et al: see column 12, lines 46-56).

**Referring to claim 26**, Rich/Gupta discloses the system of claim 23 where some or all undo operations are unknown to a remote client or its context (Gupta et al: see column 12, lines 11-12).

**Referring to claim 27**, Rich/Gupta discloses the system of claim 23 where some or all undo operations are executed after a timeout and independent of whether the client's context outcome requires such undo (Gupta et al: see column 12, lines 11-12).

**Referring to claim 28**, Rich/Gupta discloses the system of claim 23 where an undo operation's effects are confined to the data managed by the service on which the undo operation is maintained, even if the original operation involved other services (Gupta et al: see column 12, lines 45-56).

**Referring to claim 29**, Rich/Gupta discloses the system of claim 23 where the service keeps locks to ensure that undo operations can be executed correctly (Gupta et al: see column 9, lines 19-21).

**Referring to claim 30**, Rich/Gupta discloses the system of claim 23 where client context-related information is also part of any global commit message exchanges (Gupta et al: see column 10, lines 4-7).

**Referring to claim 31**, Rich/Gupta discloses the system of claim 23 where client context information includes application-specific data (Gupta et al: see column 10, lines 4-7 – the context relates to the transaction which is considered to be application-specific).

**Referring to claim 32**, Rich/Gupta discloses system of claim 31 where all or part of the context information is logged, i.e. stored on persistent storage, and retrievable by a human. Administrator (Gupta et al: see column 8, lines 11-14).

**Referring to claim 33**, Rich/Gupta discloses system of claim 23 where the service accepts messages indicative of which previously committed operations have to be undone (Gupta et al: see column 11, lines 1-7).

**Referring to claim 34**, Rich/Gupta discloses system of claim 23 where the service accepts messages indicative of which previously committed operations do not have to be undone (Gupta et al: see column 11, lines 1-7).

**Referring to claim 35**, Rich/Gupta discloses the system of claim 23 where some or all invocations are message-based or asynchronous (Gupta et al: see column 3, lines 1-4).

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**Referring to claim 36**, Rich/Gupta discloses system of claim 23 where some or all invocations are synchronous (Gupta et al: see column 3, lines 1-4).

**Referring to claim 37**, Rich/Gupta discloses system of claim 23 where the client can request the undo executions of its invocations at the service while still allowing globalCommit in the end (Gupta et al: see column 12, lines 28-56).

### ***Response to Arguments***

13. Applicant's arguments with respect to claims 6-18 and 20 have been considered but are moot in view of the new ground(s) of rejection.

14. Regarding Applicants' arguments concerning the use of Gupta to reject claims 23-57, the examiner respectfully disagrees. The claim limitation is directed towards a context or transaction context. As the limitation currently reads, the term "context" can be broadly interpreted as a context other than a transaction context. If the two terms are considered to be equal, then it is suggested that the term "context" be deleted from the claim language in order to limit the context to strictly a "transaction context."

Furthermore, for clarification purposes, the reference of Gupta was not withdrawn in the previous Office Action. The rejection itself was presented as being withdrawn since some of the citations of the prior art were altered.

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**Contact Information**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kimberly Lovel whose telephone number is (571) 272-2750. The examiner can normally be reached on 8:00 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Cottingham can be reached on (571) 272-7079. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kimberly Lovel  
Examiner  
Art Unit 2167

9 March 2007  
kml

*Huan S. Lu, PSA Examiner*  
*art unit 2167*